

5

- 10

- 15

- 20

- (c) a plurality of transporter modules operatively associated with the call server modules for formulating media-gateway-compatible messages based on the call

processing operations, and for forwarding the media-gateway-compatible messages to media gateways.

- 5
2. The scalable call processing node of claim 1 wherein  $n$  is substantially equal to  $m$ .
3. The scalable call processing node of claim 1 wherein  $m$  is at least about 1000 calls per second.
- 10
4. The scalable call processing node of claim 1 wherein  $m$  is at least about 2000 calls per second.
5. The scalable call processing node of claim 1 wherein  $m$  is at least about 3000 calls per second.
- 15
6. The scalable call processing node of claim 1 wherein  $m$  is at least about 4000 calls per second.
7. The scalable call processing node of claim 1 wherein each of the LIMs is capable of handling eight 56 kbps SS7 signaling links.
- 20
8. The scalable call processing node of claim 1 comprising an interprocessor message transport (IMT) bus for interconnecting

000000" 2258960

the link interface modules, the call server modules, and the transport modules.

- 5
9. The scalable call processing node of claim 8 wherein the link interface modules are adapted to send the SS7 messages to the call server modules over the IMT bus.
- 10
10. The scalable processing node of claim 8 wherein the call server modules are adapted to send the call processing messages to the transporter modules over the IMT bus.
- 15
11. The scalable call processing node of claim 1 wherein each of the call server modules comprises:
- (a) a translation table for translating called party address digits to trunk groups;
  - (b) a routing table for assigning the trunk groups to corresponding media gateways;
  - (c) an endpoint table for assigning trunks in the trunk groups to port numbers on the media gateways;
  - 20 (d) a connection table for storing connection information for each connection in each of the media gateways; and
  - (e) a state table for storing call state information for each endpoint of each connection.

008060" 22585960

12. The scalable call processing node of claim 1 wherein the SS7 messages received by the LIMs include ISUP messages.
13. The scalable call processing node of claim 1 wherein the call processing operations performed by the call server modules include selecting endpoints in a media gateway to set up a connection.
14. The scalable call processing node of claim 13 wherein the call processing operations performed by each call server include maintaining call state information for the endpoints.
15. The scalable call processing node of claim 1 wherein the media-gateway-compatible messages generated by the transport modules include CreateConnection messages.
16. The scalable call processing node of claim 8 wherein the LIMS, the call server modules, and the transporter modules comprise printed circuit boards, each of the printed circuit boards being removably coupleable to the IMT bus to increase or decrease call signaling processing capacity of the scalable call processing node.
17. The scalable call processing node of claim 16 wherein each of the printed circuit boards includes at least one microprocessor

5

- 25

20

21. The scalable call processing node of claim 19 wherein the switching occurs without transfer of call state information from the first call server module to the second call server module.
22. A scalable call processing node comprising:
  - (a) a link interface module for receiving SS7 call signaling messages and for performing call server selection based on at least one parameter in the SS7 messages;
  - (b) a first call server module for receiving the SS7 messages from the LIM and for functioning as a primary call server for a call and adapted to store state information for the call; and
  - (c) a second call server module for storing the state information and functioning as a backup call server for the call, wherein the second call server module is adapted to switch operation to become the primary call server for the call in response to failure of the first call server module.
23. The scalable call processing node of claim 22 wherein the switching from backup to primary call server module occurs in less than one second.

24. The scalable call processing node of claim 22 wherein the switching occurs without transfer of the call state information from the first call server module to the second call server module.
- 5
25. The scalable call processing node of claim 22 wherein the state information includes at least one call table for storing call-related information.
- 10
26. The scalable call processing node of claim 25 wherein the at least one call table includes an endpoint table for storing endpoint information for a media gateway.
- 15
27. The scalable call processing node of claim 26 wherein the at least one call table includes a connection table for storing connection information for connections in the media gateway.
- 20
28. The scalable call processing node of claim 26 wherein the at least one call table includes a state table for storing call signaling state information for endpoints in the media gateway.
29. A method for performing call server module switchover in a scalable call processing node in response to call server module failure, the method comprising:

- (a) storing call state information for a first call on first and second call server modules connected to each other via an interprocessor message transport bus;
- (b) operating the first call server module in a primary call server mode and operating the second call server module in a backup call server mode;
- (c) detecting failure of the first call server module; and
- (d) in response to failure of the first call server module, switching the second call server module to the primary call server mode without transferring the call state information from the first call server module to the second call server module.

30. The method of claim 29 wherein storing call state information includes storing parameters extracted from a sequence of ISUP messages required to set up or tear down the first call.

31. The method of claim 29 wherein the primary call server mode includes formulating instructions for setting up or tearing down the first call and forwarding the instructions to a transporter module for translation and transport to a media gateway.

32. The method of claim 29 wherein the backup mode includes storing call state information without forwarding call processing messages to intended destinations.



- 5

[illegible]